

Viewing JPEGs on TV – Part 3

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[This final part is much-edited compared with the original published in Archive mag in 2005. That is due firstly to all the specific models of TVs and DVD recorders/players then listed having been superseded. There's no merit in detailing replacements as, in general, a far higher proportion of products now have slots for (usually) SD cards which can hold JPEG images for viewing on TV and which will be the first topic here.

We'll also take the opportunity to consider, in detail, Windows equivalents of the image-processing software for RISC OS examined previously.]

Using media cards

An increasing number of current models of TVs and DVD recorders/players (including portable players) have a slot into which a media card can be inserted. Usually these are for SD cards but variants such as compact flash cards (via a PCMCIA adaptor) can be used in the same way.

The point of this feature is that JPEG images can be loaded onto the card for eventual display on TV. In practice, we can treat these cards as a direct alternative to using JPEG CDs, discussed in detail throughout Part 2.

Alternatively, if the DVD recorder has a hard disc drive, the JPEGs can be copied from the media card or CD to hard disc, ready for display. In all cases, the discussions in Part 2 on pre-scaling, rotating and/or cropping images still apply.

Media card format/compatibility

Unfortunately, there's a potential problem with formatting the media cards. In our experience, cards formatted on a computer – or even pre-formatted cards – may not be readable by the TV, DVD recorder/player (including portable players) or a digital camera.

By the same token, cards (re-)formatted in a DVD recorder often cannot be read by a camera and/or a computer. Catch 22!

However, we've yet to hit a problem if a card is (pre-)formatted *in a camera*, before any image massaging is done in the computer and the results downloaded onto the media card, *provided* the top-level directory structure written onto the card by the camera is retained. So that's OK.

'Digital photo player'

Although not as readily available as they once were, you may still see plug-in, multi-media 'photo player' adaptor devices advertised.

They're variously reported as being able to handle memory sticks and smart media, compact flash and SD cards, onto which you can load JPEGs for display on TV, as previously described.

This appears to be a very flexible option but we feel the adaptors are a tad expensive for what they do. More importantly, the connection to the TV is via either a composite video lead or, occasionally, an S-video cable. So some display quality will be sacrificed by using an intermediate *analogue* link, compared with the previously-described, purely digital solutions.

Slideshows

In Part 2, we concentrated on preparing images for burning onto JPEG *data* CDs for display as a 'slideshow'. Switching from one image to the next is done either manually, using the remote control, or can be semi-automatic if the DVD player or recorder supports it. However, there's no facility for adding transitions, titles, soundtrack or commentary.

For that, we can consider a fully-automated slideshow, with all the bells and whistles, burnt onto a video-CD (in VCD or SVCD format), or as a conventional video-DVD. These options are really a sub-set of the more extensive topic of video editing, so we've gone into that in detail in the *Video to DVD* articles on the AVLine CD. See Part 3, pp5-6 and Part 5, p4.

RISC OS application software

To date, in order to pre-process images ready for display, we've considered suitable application software for the RISC Operating System.

A point not yet made is that, when using *FSI_Batch*, images already in the 'lossy' JPEG format are first converted to sprites for processing, but then need to be re-converted back to JPEG format for display purposes. So unavoidably, albeit to some limited degree, at least some additional loss of quality must be accepted.

This is why we suggested in Part 1, p3, that the output Q factor should be set to quite a high figure of 95 (or maybe even 100) in order to limit this additional loss. Ironically, you may find that at this high setting, the resultant JPEG image filesize becomes larger than the imported original, even though scaled down!

But that shouldn't be troublesome unless you wish to pack as many images as possible onto the medium; perhaps unlikely unless you're using a relatively small-capacity media card.

We also considered the use of *JClean* and/or *JCut* for stripping out EXIF information and/or rotating and cropping images. But as both retain the JPEG format throughout, there's no further loss of image quality in their use.

Windows application software

But what if you wish to do the job using Windows? We set out to look for one or more software titles which, in principle, could do the same tasks. Perhaps inevitably, we were immediately spoilt for choice.

Indeed, there are countless applications which purport not only to do the image pre-processing tasks, but also to burn the batch of images onto data CD, or VCD/SVCD/DVD. It's well worth digging into whatever software you already have as you may find that you have titles with the required functions.

For example, David Pilling's Windows port of his scanning software – *DPScan* – has very quickly become one of our favourite titles and will import a JPEG image, rotate it, re-size it, crop it and output it as a JPEG, plus apply many other functions, all in an extremely user-friendly manner. (See *Video to DVD*, Part 5, pp6-7.)

The problem is of course that this is all in the singular, whereas we need to be able to perform the same tasks on batches of images. In other words, we need a Windows equivalent of *FSI_Batch*.

Batch processing under Windows

We asked Google to come up with some batch processing programmes and – once again – were overwhelmed. However, attempts to find something of the same ilk as *FSI_Batch* were unsuccessful for one reason or another. Fortunately, the author of *FSI_Batch*, Jochen Lueg, recommended the very thing, so that's OK. Thank you Jochen!

The title is *FastStone Photo Resizer* v2.2 which can be downloaded free of charge for home use from the authors' website at www.faststone.org

Installation is completed in the usual way and a shortcut icon appears on the Windows desktop. Double-clicking on it opens the programme's main window – and thereafter you're on your own as the **Help** files are virtually non-existent! But that shouldn't dissuade us from using *Photo Resizer* as driving it really is as near self-explanatory and user-friendly as it can be.

There are two primary options in the main window: **Batch Convert** and **Batch Rename**. However, the **Rename** function is replicated within the **Batch Convert** options, so we can consider doing everything under the one roof.

Firstly, find and load the initial batch of images you wish to process (bearing in mind that – for the purpose of viewing on TV – rescaling, rotate/rescaling and cropping for widescreen TVs will need to be done in three separate batches. See Part 1, pp2-6 and Part 2, pp2-3.)

Finding and loading images can be done from the directory structure shown within *Photo Resizer's* main window.

Alternatively, we find it more convenient to locate and select the relevant images from within either the standard Windows directory structure, or *Windows Explorer*, and drag-and-drop the selected batch into the **Input List** pane.

Batch rescaling

Let's start with simple batch rescaling to 720×576 pixels to stop the 'shimmer'. We need to pre-set the various options, prior to processing, as illustrated in Fig 1:

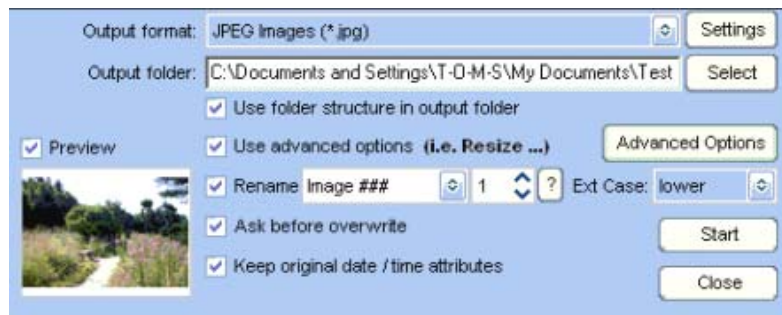


Fig 1 *Photo Resizer's* main window – Options (section)

– **Preview.** If the **Preview** box is ticked, clicking on any file in the **Input List** pane will display the image as a thumbnail. This can be repeated for other images and is very handy for double-checking you've loaded the right ones.

– **Output format:** For this first batch, select **JPEG Images** from the sub-menu, ready for viewing. Click on **Settings** and set a Q factor of 95 (or even 100), as discussed in Part 1, p3.

– **Output folder:** This is the equivalent of the **Output folder** in *FSI_Batch*. Create and name a new folder on disc, wherever you want it, then click on **Select** and identify it to *Photo Resizer*.

(This is a once-only operation as the folder name and location are stored for future use.)

– **Use advanced options.** For the moment, tick the box; we'll come back to it in a little while.

– **Rename.** If desired, you can rename the batch of images, in parallel with the rescaling, by ticking the box and entering your choice of name, noting that one or more # characters can be used to give the image a number, starting at whatever numeral you enter in the adjacent box. So, for example, typing **Slide##** in the window and leaving the start number as 1 would result in the images being renamed *Slide01*, *Slide02* and so on.

Note that, if the batch consists of more than nine images, the leading zero is important, otherwise the powerful-but-stupid computer will renumber them in the alpha-numeric (dis-)order 1, 11-19, 2, 20-29, and so on up to 89, 9, 91-99. By the same

token, if you have more than 99 images to rename, the string must be **Slide###**.

Note also that if you intend to view or process the images under RISC OS for any reason, and to avoid any clash with Windows filenames, it's best to avoid putting a space etc in the image name.

If you do *not* want to rename the images, do make sure the box is *unticked* before starting the rescaling process.

– **Advanced Options.** Click on this label (adjacent to the **Use advanced options** caption) to open a second window (Fig 2) which displays a repertoire of nine possible parallel processes along the horizontal bar. In this illustration, clicking on **Resize** and then ticking the **Use Resize/Resample** box opens a series of sub-options.

Note that a green 'LED' is now shown next to the **Resize** label, indicating that, at this stage, this is the only process which is 'active', so resizing (rescaling) is the only one which will be applied to the input batch of images.

Click on the **In Pixels** button and enter the desired dimensions of 720×576 pixels in the **New Width:** and **New Height:** boxes.

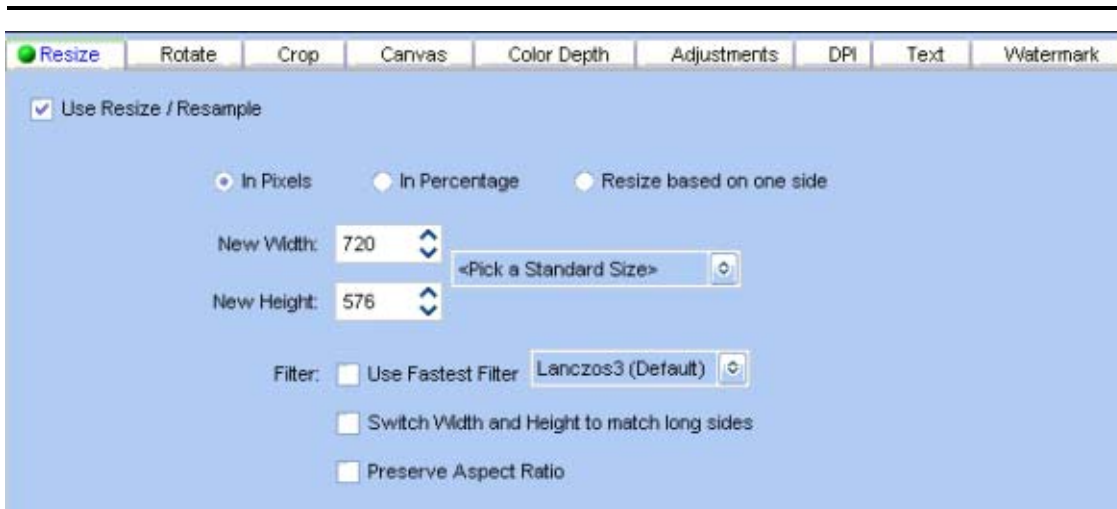


Fig 2 Advanced Options window – Resize (section)

Ensure the **Preserve Aspect Ratio** box is *not* ticked (so that it doesn't override the slightly 'squished' 720×576 pixel dimensions).

Finally, click on **Start** (Fig 1) to commence the batch rescaling process. A self-explanatory progress box opens.

On completion, you'll find the batch of rescaled images in the designated **Output** folder, renamed if that option was also pre-selected.

(Note that, apart from renaming, all this is the exact Windows equivalent of using *FSI_Batch* under RISC OS.)

Batch rotating/rescaling

Now load in the second batch – images taken in 'portrait' format – all of which will need to be rotated through (usually) +90° for viewing 'right way up' and rescaled to a common size of 405×576 pixels to stop the 'shimmer'. The **Output format** still needs to be set to **JPEG** for viewing on TV.

All the process settings are again input via the **Advanced Options** window:

Still in the **Resize** window (Fig 2), change the desired batch rescaling dimensions to 405×576 pixels in the **New Width:** and **New Height:** boxes.

Note that, unlike *FSI_Batch*, the X/Y pixel dimensions are not transposed by the rotation process, going on in parallel, so can be entered in the boxes in their logical sense.

Now click on the **Rotate** label and tick the **Use Flip/Rotate** box to open the sub-options for rotation (Fig 3). Note that a green 'LED' is now also shown adjacent to the **Rotate** label, indicating that both the **Resize** and **Rotate** processes will be applied to the same batch of images, in parallel.)

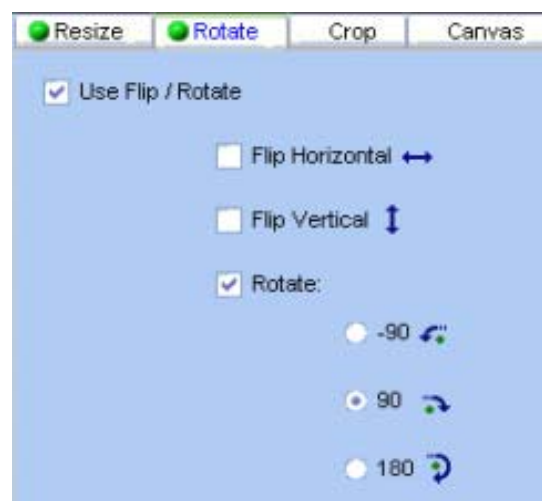


Fig 3 Advanced Options window – Rotate (section)

Tick the **Rotate:** button and (usually) the **90** button to rotate all the images, clockwise, through 90°.

Click on **Start** (Fig 1) to rotate and rescale the second batch of images. On completion, they will again be found in the designated *Output* folder.

Widescreen TVs

Finally, the third batch process is the exact equivalent of rescaling and cropping images, ready for display on a widescreen TV (filling the full screen width, rescaling in the vertical to avoid the ‘shimmer’ and saving them in JPEG format).

Under RISC OS, this was achieved in two separate processes:

- Firstly by rescaling the images to 960×768 pixels, as a batch (using *FSI_Batch*).
- Secondly by cropping them down, individually, to 960×576 pixels (using *JCut*).

The eagle-eyed will have spotted the **Crop** option in Figs 2 and 3 – but this is to crop images *as a batch* and, unfortunately, that process cannot be employed here. So ideally we need a Windows equivalent of *JCut*.

There’s quite a selection of suitable titles but, as we’ve been ‘plugging’ David Pilling’s *DPScan*, and it will do the cropping job admirably, we’ll use that in this illustration.

The only factor to watch out for (it’s not really a limitation) is that, unlike *JCut*, *DPScan* cannot input a JPEG, crop it and output it – again as a JPEG – without first converting it into an intermediate-stage, conventional bitmap image.

So ideally we need to bypass the first conversion to the ‘lossy’ JPEG format which would introduce an extra degree of image deterioration.

As we shall see, this is easy to resolve. The process of rescaling and cropping is as follows:

Load in the third batch of images; those which we wish to rescale as a batch to 960×768 pixels and then crop individually to 960×576 pixels.

Now click on the **Rotate** tab in the **Advanced Options** window (Fig 3) and *untick* the **Use Flip/Rotate** box. The ‘LED’ next to the **Rotate** label is no longer shown, leaving just the **Resize** process active.

Click on the **Resize** label to re-open its options window (Fig 2) and change the **New Width:** and **New Height:** boxes to read 960×768 pixels.

Go back to *Photo Resizer*’s main window (Fig 1) and change the image **Output format** to a ‘non-lossy’, standard bitmap format which *DPScan* will understand. The next one down the list – **BMP** – will do fine.

Click on **Start** (Fig 1) to rescale the third batch of images. On completion, they will appear in the *Output* folder, rescaled to the intermediate 960×768 pixels, and in the BMP format.

Image cropping (using DPScan)

Before we crop the images, we need to set up *DPScan*, so load it (main window opens), click on **Misc-Choices** and then on the **Page** icon.

From the **Units** sub-menu, select **pix[els]**, click on **OK** and **Save**, then quit *DPScan*. Set up is now complete.

To crop each image, individually, reload *DPScan* and drag an image into the main window (or drag it over *DPScan*’s shortcut icon).

At this stage, the image is sized at 960×768 pixels and looking a little ‘squished’ to allow for the pre-expansion by the TV display circuitry.

Now click on *DPScan*’s **Crop** tool icon (bottom-left in the toolbox in Fig 4) and very roughly select-drag a crop box round the image (on this occasion, size doesn’t matter...)

Rather than try to resize the crop box, manually and *exactly* (fiddly), instead enter the desired dimensions into the info palette display boxes – **960** pixels in the **W** icon and **576** pixels in the **H** icon – and press <enter>. The crop box snaps to *exactly* the correct size.

Select-drag the complete crop box into its desired position (*without* changing its dimensions). The top-bottom can be placed to suit you and the image, but the left-right sides must *exactly* overlay the left-right edges of the image.

If you find that just a tad too fiddly, instead you can tweak the number in the X offset box, as required, and press <enter>. (The X offset is 245 pixels in this illustration; reducing it will move the crop box to the left, and *vice-versa*.)

Double-check that the crop box dimensions in the info palette are still showing as 960×576 pixels, i.e. that they haven't inadvertently been upset by the tweaking.

Once you're happy with the left-right positioning of the crop box – and the positioning of the top and bottom to suit the image – select **Edit-Crop** which will crop the image to the 960×576 pixels contained within the box.

Save the result *in JPEG format*, ready for display.

Provided you can stand the excitement, all the other images in this third batch need to be cropped, using the same procedure. There's no need to quit *DPScan* each time, however. If you drag-and-drop another image into the main window, it will replace the previous one, speeding things up markedly.



Fig 4 Cropping images using DPScan

The end result is that you'll have a batch of images, rescaled to fit the full width of the 16:9 widescreen TV, and cropped individually to 576 pixels in height to stop the 'shimmer'.

At this stage, they will still look slightly 'squished', but that will be corrected by the display circuitry, prior to display.

Although serious boredom may well set in during this final process, we hope the eventual pleasure of seeing your personal masterpieces filling the display of a widescreen TV will make up for that.

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